

**PATENT COOPERATION TREATY**  
**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
 (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>FPCT10970</b>	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. <b>PCT/JP2004/013949</b>	International filing date (day/month/year) <b>24.09.2004</b>	Priority date (day/month/year) <b>02.10.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>A61B8/00</b>		
Applicant <b>Hitachi Medical Corporation</b>		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.		
2.	This REPORT consists of a total of <b>6</b> sheets, including this cover sheet.		
3.	This report is also accompanied by ANNEXES, comprising:		
a.	<input type="checkbox"/> ( <i>sent to the applicant and to the International Bureau</i> ) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.		
b.	<input type="checkbox"/> ( <i>sent to the International Bureau only</i> ) a total of (indicate type and number of electronic carrier(s))  , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).		
4.	This report contains indications relating to the following items:		
<input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input checked="" type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application			

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- This report is based on translations from the original language into the following language \_\_\_\_\_ which is the language of a translation furnished for the purposes of:
- international search (Rule 12.3 and 23.1(b))  
 publication of the international application (Rule 12.4)  
 international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
- the international application as originally filed/furnished  
 the description:  
 pages \_\_\_\_\_ as originally filed/furnished  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- the claims:  
 nos. \_\_\_\_\_ as originally filed/furnished  
 nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19  
 nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- the drawings:  
 sheets \_\_\_\_\_ as originally filed/furnished  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3.  The amendments have resulted in the cancellation of:
- the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (*specify*): \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (*specify*): \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

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## Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- the entire international application  
 claims Nos. 21

because:

- the said international application, or the said claims Nos. 21  
 relate to the following subject matter which does not require an international preliminary examination (*specify*):

The invention set forth in claim 21 is considered to be a diagnostic method that is practiced upon the human body, and thus claim 21 relates to a subject matter for which this International Preliminary Examining Authority is not required to carry out an international preliminary examination.

- the description, claims or drawings (*indicate particular elements below*) or said claims Nos. \_\_\_\_\_ are so unclear that no meaningful opinion could be formed (*specify*):

- the claims, or said claims Nos. \_\_\_\_\_ are so inadequately supported by the description that no meaningful opinion could be formed.  
 no international search report has been established for said claims Nos. 21  
 the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:  
 the written form                             has not been furnished  
      does not comply with the standard  
 the computer readable form               has not been furnished  
      does not comply with the standard  
 the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.  
 See Supplemental Box for further details.

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## Box No. IV      Lack of unity of invention

1.  In response to the invitation to restrict or pay additional fees the applicant has:
  - restricted the claims.
  - paid additional fees.
  - paid additional fees under protest.
  - neither restricted the claims nor paid additional fees.
  
2.  This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
  
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
  - complied with.
  - not complied with for the following reasons:

The feature that is common to the inventions set forth in claims 1 to 20 is the configuration that is set forth in claim 1. As a result of a search of the prior art, however, it became apparent that the configuration set forth in claim 1 is not novel, in as much as said configuration is also presented in the document (Hiroshi MASUZAWA et al., "Electrostrictive Materials for Ultrasonic Probes in the Pb(Mg<sub>1/3</sub>Nb<sub>2/3</sub>)O<sub>3</sub>-PbTiO<sub>3</sub> System," Japanese Journal of Applied Physics, Supplement, 30 November 1989, Vol. 28, Supplement 28-2, pages 101 to 104).

Such being the case, the configuration set forth in claim 1 cannot be considered to be a special technical feature in the meaning of the second sentence of PCT Rule 13.2.

[Refer to the Supplemental Box]

4. Consequently, this report has been established in respect of the following parts of the international application:
  - all parts.
  - the parts relating to claims Nos. 1-6

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**Box No. V**      **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	6	YES
	Claims	1-5	NO
Inventive step (IS)	Claims	6	YES
	Claims	1-5	NO
Industrial applicability (IA)	Claims	1-6	YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)**

Document 1: JP 2-94579 A (Hitachi, Ltd.; Hitachi Metals, Ltd.), 05 April 1990, entire text, all drawings (Family: none)

Claims 1 to 5

The inventions set forth in claims 1 to 5 lack novelty and do not involve an inventive step in the light of document 1 cited in the international search report. Document 1 discloses an array-type ultrasonic probe, which is configured from a composition that exhibits a characteristic whereby the electromechanical coupling coefficient of the composition changes according to the intensity of the direct current bias that is applied thereto, wherein the elements share a common electrode in both the direction along the minor axis and the direction along the major axis.

Claim 6

The invention set forth in claim 6 is not disclosed in any of the documents that are cited in the international search report.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Box IV

Consequently, the inventions set forth in claims 1 to 2, the invention set forth in claim 3, the invention set forth in claim 4, the invention set forth in claim 5, the invention set forth in claim 6, the invention set forth in claim 7, the invention set forth in claim 8 and the inventions set forth in claims 9 to 20 clearly do not conform to the requirement of unity of invention.